

CLEANER BURNING GASOLINE

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Air
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California
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Technical Bulletin

Facts About Cleaner-Burning Gasoline (California Reformulated Gasoline)

By June 1996, all gasoline sold in California will be cleaner-burning gasoline — fuel that pollutes less yet performs as well as conventional gasoline. This bulletin gives automotive service technicians the facts they need to answer customer questions about cleaner-burning gasoline.

Why is California changing to cleaner-burning gasoline?

Over 90% of all Californians breathe polluted air some time every year. Cleaner-burning gasoline reduces emissions from the main source of air pollution — gasoline-powered engines.

How much air pollution is reduced with cleaner-burning gasoline?

Compared to summertime conventional gasoline, cleaner-burning gasoline significantly reduces harmful air pollution — smog-forming hydrocarbons and nitrogen oxides (NO_x) by 15%, carbon monoxide (CO) by 11%, and benzene by 50%. The reduction in smog-forming emissions is equivalent to removing 3.5 million vehicles from California roads.

Will cleaner-burning gasoline perform as well as conventional gasoline?

Yes. The California Air Resources Board (ARB) teamed up with auto manufacturers, gasoline producers, and other affiliated industries to test cleaner-burning gasoline in on-road vehicles and off-road equipment.

During 6 months in 1995, over 800 vehicles of varying makes, mileage and age were driven about 5 million miles on the new fuel. ARB and fleet service technicians regularly checked fuel hoses, pumps, tanks, gaskets, and carburetors for fuel-related problems.

The test results

No change in performance

- Cleaner-burning gasoline performed as well as conventional gasoline in terms of driveability, starting, idling, acceleration, power, and safety.
- Fuel system repairs rates for test and control vehicles showed no meaningful differences.
- As expected, older, high mileage vehicles from both the test and control fleets had a higher rate of fuel system problems.

No new maintenance

- No additional maintenance or adjustments were needed for any of the vehicles running on cleaner-burning gasoline.

Small reduction in fuel economy

- Compared to conventional oxygenated gasoline, fuel economy was reduced by 1%.

Cleaner-Burning Gasoline Test Fleets

- ✓ Bank of America
- ✓ CSU, Fresno
- ✓ CalTrans
- ✓ Sacramento City Police
- ✓ County of Sacramento
- ✓ GTE
- ✓ Pacific Bell

During a six month testing program, over 800 vehicles were driven five million miles on cleaner-burning gasoline.

Will cleaner-burning gasoline perform as well as conventional gasoline? (cont.)

Major auto manufacturers, other equipment manufacturers, and gasoline producers also tested cleaner-burning gasoline.

- **General Motors and Ford Motor Company** evaluated the effects of several cleaner-burning gasoline formulas on fuel system parts made of rubber and plastics, and on metal wear. Results indicate cleaner-burning gasoline does not adversely affect fuel system materials.
- **Nissan Motor Company** tested the formation of valve and combustion chamber deposits in vehicles. There was no adverse deposit formation from cleaner-burning gasoline.
- **Harley-Davidson's** test program showed the use of cleaner-burning gasoline in their motorcycles caused no fuel-related problems.
- **Holley Performance Products** tested several power valves and elastomer components used in Holley products and found no detrimental effects.
- **Chevron U.S.A. Products Company** conducted an employee fleet study with an emphasis on older, foreign vehicles with high mileage. More failures were reported for the test fleet than for the control fleet. However, the rate of problems for the test fleet was not significantly higher than historical rates.
- **Texaco Refining and Marketing, Inc.**, in cooperation with the ARB, evaluated the effects of gasolines containing very low levels of aromatic hydrocarbons. The tests suggested that such fuels could accelerate the failure of some fuel system components in older, high mileage or extreme service vehicles. However, ARB doesn't expect gasolines with such low aromatic levels to reach consumers in California.

Will cleaner-burning gasoline be available in different grades ?

Yes. It will be available in the same grades or octane ratings as conventional gasoline.

Is cleaner-burning gasoline different from wintertime oxygenated gasoline?

Yes. Cleaner-burning gasoline contains the same level of oxygenates as wintertime fuel, as well as other improvements to reduce smog-forming and toxic emissions. The year-round use of cleaner-burning gasoline eliminates the need for a different wintertime fuel.

What about the cost and price?

Cleaner-burning gasoline costs 5 to 15 cents more per gallon to make than conventional gasoline. It is impossible to predict how this will affect the retail prices at the pump. Other factors, including crude oil prices, product supply and demand, and weather also affect prices.

Why Cleaner-Burning Gasoline Pollutes Less

Evaporates less	◆ Less hydrocarbons
Reduced aromatics	◆ Less hydrocarbons
Reduced olefins	◆ Less NO _x
Year-round oxygenates	◆ Less CO
Less sulfur	◆ Protects catalysts
Less benzene	◆ Less toxics
Lower distillation temps.	◆ Less hydrocarbons

Gasoline producers remove or modify the components that contribute the most to air pollution.

Cleaner-Burning Gasoline information for auto technicians and their customers:

- Customer Brochure—*We Can all Breathe Easier*
- Automotive Service Technician Video
- ARB Test Program—*Technical Report*
- Detailed Brochure—*Cleaner-Burning Gasoline*
- Customer Videos
- ARB Test Program — *Summary of Findings*

For more information, call 1-800-922-7349

